

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

Comparison of the effect of Manual pressure release and Algometer pressure release on morphological characteristics in latent upper trapezius muscle trigger points

Protocol summary

Study aim

A Comparative Study of the Effects of manual pressure release and pressure release with algometer on latent trigger points of upper trapezius muscle

Design

clinical trial of manual pressure release intervention group and intervention group pressure release with algometer: on 40 samples: with parallel groups: randomized

Settings and conduct

Therapeutic interventions on patients with latent upper trapezius trigger points in two separate groups and 5 sessions of treatment in the physiotherapy clinic of the Faculty of Rehabilitation of Shahid Beheshti University of Medical Sciences is underway: the study variables included pain; pressure pain threshold; neck lateral flexion range of motion; thickness; histogram; pennation angle of upper trapezius muscle; measurement of variables is done before and after intervention and after fifth session; the study variables is followed after two weeks.

Participants/Inclusion and exclusion criteria

Criteria for entering the study: women aged 20 to 40 years; presence of latent trigger points in the muscle according to criteria: presence of palpable taut bundles in the skeletal muscle; presence of a painful spot in the tight bundle; presence of at least 1 tender point in palpable taut band in response to a pressure of 25 newtons per square meter by the therapist; creation of pain at least 3 of 10 in visual scale of pain in initial assessment

Intervention groups

manual pressure release group: manually enter the pressure on latent trigger points of upper trapezius (LTOUT); pressure release with algometer group: enter the pressure with algometer on LTOUT

Main outcome variables

pain; pressure pain threshold; neck lateral flexion range of motion; thickness; histogram; muscle fiber pennation

angle; quality of life

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180602039945N1**

Registration date: **2019-03-17, 1397/12/26**

Registration timing: **retrospective**

Last update: **2019-03-17, 1397/12/26**

Update count: **0**

Registration date

2019-03-17, 1397/12/26

Registrant information

Name

Rahimeh Fazeli

Name of organization / entity

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-06-04, 1397/03/14

Expected recruitment end date

2018-11-20, 1397/08/29

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the effect of Manual pressure release and Algometer pressure release on morphological characteristics in latent upper trapezius muscle trigger points

Public title

effect of Manual pressure release and Algometer pressure release on morphological characteristics in upper trapezius muscle with latent trigger points

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Women with age ranges from 20 to 40 years presence of latent trigger points in the muscle based on the therapist's assessment presence of palpable taut bundles in skeletal muscle presence of at least 1 tender point in taut bundle in response to the pressure of 25 Newtons per square meter by the therapist Creation of pain at least 3 of 10 in visual scale of pain in Initial assessment

Exclusion criteria:

Diagnosis of fibromyalgia syndrome History of severe head and neck injury and whiplash injury History of cervical spine surgery and fracture and hypermobility or instability Diagnosis of radiculopathy, myelopathy and malignancy Treating the trigger points in a past month If patients are not willing to continue to work for any reason

AgeFrom **20 years** old to **40 years** old**Gender**

Female

Phase

N/A

Groups that have been masked

- Participant

Sample sizeTarget sample size: **40****Randomization (investigator's opinion)**

Randomized

Randomization description

Simple random randomization method with random number table is performed

Blinding (investigator's opinion)

Single blinded

Blinding description

After fully explaining the study process to the participants and informed consent by the patient , no information was given on the type of treatment and the specificities of intervention groups

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics committee of Shahid Beheshti University of Medical Sciences

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Kianshahr

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1858777796

Approval date

2018-12-18, 1397/09/27

Ethics committee reference number

IR.SBMU.RETECH.REC.1397.715

Health conditions studied**1****Description of health condition studied**

latent trigger points

ICD-10 code

M79.9

ICD-10 code description

Soft tissue disorder, unspecified

Primary outcomes**1****Description**

Pain intensity based on the visual analogue scale

Timepoint

Before intervention; immediately after intervention; fifth session; 15 days after the last session

Method of measurement

Visual analogue pain

2**Description**

Pressure pain threshold

Timepoint

Before intervention; immediately after intervention; fifth session; 15 days after the last session

Method of measurement

With algometer device

3**Description**

Neck lateral flexion range of motion

Timepoint

Before intervention; immediately after intervention; fifth session; 15 days after the last session

Method of measurement

With goniometer device

4**Description**

Thickness of upper trapezius muscle

Timepoint

Before intervention;fifth session; 15 days after the last session

Method of measurement

With the help of ultrasonography and measuring the vertical distance between two fascias

5**Description**

Histogram of upper trapezius muscle

Timepoint

Before intervention;fifth session; 15 days after the last session

Method of measurement

With the help of ultrasonography and measure the mean light

6**Description**

P angle in upper trapezius muscle fibers

Timepoint

Before intervention;fifth session; 15 days after the last session

Method of measurement

With the help of ultrasonography and measuring the angle of the fibers

7**Description**

quality of life

Timepoint

Before the intervention; fifth session

Method of measurement

Quality of life questionnaire with 36 items

Secondary outcomes

empty

Intervention groups**1****Description**

First intervention group:manual pressure release.It is a popular, safe and effective treatment method that is carried out by a skilled physiotherapist.It is continuous manual pressure with tolerable pain that is apply with fingertip or thumb over the tissue barrier at the trigger point.

Category

Rehabilitation

2**Description**

Second intervention group: pressure release with algometer.It is continuous pressure with tolerable pain that is carried out by the therapist that mechanical therapeutic algometer is used for apply continuous and effective pressure and maintain pressure by therapist.

Category

Rehabilitation

Recruitment centers**1****Recruitment center****Name of recruitment center**

Shahid Beheshti University of Medical Sciences,
Faculty of Rehabilitation Sciences

Full name of responsible person

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

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Grant name

Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Shahid Beheshti University of Medical Sciences
Proportion provided by this source
100
Public or private sector
Public
Domestic or foreign origin
Domestic
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact

Name of organization / entity
Shahid Beheshti University of Medical Sciences
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student
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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to make this available

Title and more details about the data/document

Only part of the data, such as the information on the main outcome or the like, can be shared

When the data will become available and for how long

Start the access period immediately after printing the results

To whom data/document is available

Researchers working in academic and academic institutions

Under which criteria data/document could be used

No bets

From where data/document is obtainable

To the e-mail address:Rahimehfazeli@smbu.ac.ir

What processes are involved for a request to access data/document

Unlimited

Comments